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ABSTRACT

This document presents the principles behind modern computer graphics without straying into the arcane languages of mathematics and computer science. Illustrations accompany the clear, step-by-step explanations that describe how computers draw pictures. The 22 chapters of the book are organized into 5 sections. "Part 1: Computer Graphics in Today's World" includes chapters: (1) "Flight Simulators"; (2) "Computer-Aided Design"; (3) "Medical Imaging"; and (4) "Video Games." "Part 2: Computer Graphics Fundamentals" gives: (5) "Computers, Pixels, and Color"; (6) "Palettes and Palette Optimization"; (7) "Drawing, Filling, and Scan Converting"; (8) "Texts and Fonts"; and (9) "Antialiasing." Chapters in "Part 3: Images and Image Processing" are: (10) "Getting Images into the Computer"; (11) "Bitmapped File Storage"; (12) "Image Compression"; and (13) "Image Enhancement and Special Effects." "Part 4: Three-Dimensional Modeling and Rendering" presents: (14) "Representing Objects in Three-Dimensional Space"; (15) "Viewing Objects in Three-Dimensional Space: Projections"; (16) "Shading, Lighting, and Surface Removal"; (17) "Ray Tracing"; and (18) "Solid Modeling." "Part 5: Final Frontiers" contains: (19) "Computer Animation"; (20) "Fractals"; (21) "Morphing"; and (22) "Virtual Reality." An index concludes the work. (MM)

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